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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/894,675 | 06/28/2001 | Lutz Melchior | IT-273 | 6394 |

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EXAMINER

WOOD, KEVIN S

ART UNIT PAPER NUMBER

2874

DATE MAILED: 05/30/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/894,675

Applicant(s)

MELCHIOR ET AL.

Examiner

Kevin S Wood

Art Unit

2874

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-27, 31, 33 and 35-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 20-23, 25 and 33 is/are allowed.
- 6) ☒ Claim(s) 1-5, 7, 10, 15-19, 24, 26, 27, 31 and 35-37 is/are rejected.
- 7) ☒ Claim(s) 8, 9, 11-14 and 16 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 July 2001 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

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DETAILED ACTION

Response to Amendment

1. This action is responsive to amendment C filed 3/11/03. Claims 29, 32 and 34 have been canceled. New claims 35-37 have been added. Claims 1-5, 7-27, 31, 33 and 35-37 are now pending in the application.
2. Based on the applicant's amendment, the rejection of claim 16 under 35 U.S.C. 112, second paragraph, is now withdrawn.

Response to Arguments

3. Applicant's arguments with respect to claims 1-5, 6-19, 24, 26, 27 and 31 have been considered but are moot in view of the new ground(s) of rejection.

Drawings

4. The drawings are objected to as being informal. The informal drawings are of sufficient quality to permit examination. Accordingly, new drawings when the application is allowed.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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6. Claims 1, 4, 5, 7, 10, 31, 35 and 37 are rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 4,285,571 to Winzer.

Referring to claims 1, 31 and 35, Winzer discloses all the limitations of the claimed invention. Winzer discloses a branching device including: a first optical waveguide section (1); a second optical waveguide section (1'); a first glass ferrule (3); a second glass ferrule (3'); and at least one optical component (10). See Fig. 1 and its respective portion of the specification.

Referring to claims 4 and 5, Winzer discloses that the inclined end surface of the first waveguide section (1) and the inclined end surface of the second waveguide section (1') are coplanar and are essentially 45 degrees with respect to the optical axis of the waveguide sections. See Fig. 1 and its respective portion of the specification.

Referring to claims 7, 10 and 37, Winzer discloses a mounting tube (2,2') receiving the first glass ferrule (3) and the second glass ferrule (3'). See Fig. 1 and its respective portion of the specification.

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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8. Claims 2, 3, 17-19, 24, 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,285,571 to Winzer in view of U.S. Patent No. 4,701,012 to Kaiser.

Referring to claims 2 and 3, Winzer discloses all the limitations of the claimed invention, except Winzer does not appear to disclose that the beam divider means is a wavelength selective filter. Kaiser discloses a similar device that includes wavelength selective filters (101,102,103,104) between waveguide sections for the purpose of reflecting a single selected wavelength onto each component (24,25,26,27,28) and allowing the signal with in the waveguide to be demultiplexed. Since Winzer and Kaiser are both from the same field of endeavor, the purpose disclosed by Kaiser would have been recognized in the pertinent art of Winzer. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a wavelength selective filter as the beam divider means within the device of Kaiser for the purpose of demultiplexing the signal by reflecting only a single selected wavelength onto the component.

Referring to claims 17-19, Winzer discloses all the limitations of the claimed invention, except Winzer does not appear to disclose a plurality of waveguide sections having inclined surfaces. Kaiser discloses a similar device that includes a plurality of wavelength selective filters (101,102,103,104) between waveguide sections for the purpose of reflecting a single selected wavelength onto each component (24,25,26,27,28) and allowing the signal with in the waveguide to be demultiplexed. Since Winzer and Kaiser are both from the same field of endeavor, the purpose

disclosed by Kaiser would have been recognized in the pertinent art of Winzer. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize a multiple wavelength selective filters and multiple receiving components within the device of Kaiser for the purpose of demultiplexing the signal by reflecting only a single selected wavelength into each component.

Referring to claim 24, 26 and 27, Winzer discloses all the limitations of the claimed invention, except Winzer does not appear to disclose the use of a coupling lens between the inclined surface and the optical component. Kaiser discloses the use of lenses (12-16) between the filters and the optical components for the purpose of efficiently coupling the light reflected from the filter onto the corresponding optical component. Since Winzer and Kaiser are both from the same field of endeavor, the purposes disclosed by Kaiser would have been recognized in the pertinent art of Winzer. It would have been obvious to one having ordinary skill at the time the invention was made to utilize a lens between the beam dividing means and the optical component, for the purpose efficiently coupling the light reflected by the beam dividing means onto the optical component.

9. Claims 15 and 36 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,285,571 to Winzer.

Referring to claim 15, Winzer discloses all the limitations of the claimed invention, except Winzer does not specifically disclose an immersion means filling a gap between the first and second waveguides, where the index of refraction of the immersion means matches the index of refraction of the waveguides. It would have

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been obvious to one having ordinary skill in the art at the time of the invention was made to fill any gaps between the optical fibers with an index matching material since it is known within the art that providing an index matching material between coupled waveguides minimizes optical losses and increases coupling efficiency.

Referring to claim 36, Winzer discloses all the limitations of the claimed invention, except Winzer does not specifically disclose that the filter layers are a 50/50 beam splitter. It would have been obvious to one having ordinary skill in the art at the time the invention was made use a 50/50 beam splitter since it was known in the art that a 50/50 beam splitter divides an signal into two identical optical signals.

Allowable Subject Matter

10. Claims 20-23, 25 and 33 are allowed.

11. Claims 8, 9, 11-14 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

12. The following is a statement of reasons for the indication of allowable subject matter:

Referring to claims 8 and 16, the prior art does not disclose all the limitations of the claimed device. The prior art does not appear to disclose the device as claimed, including a radial opening for the insertion of an immersion means.

Referring to claim 9, the prior art does not disclose all the limitations of the claimed device. The prior art does not appear to disclose the device as claimed,

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including a semiconductor pack for mounting on a printed circuit board, the optical component located in the semiconductor pack.

Referring to claims 11-14, the prior art does not disclose all the limitations of the claimed device. The prior art does not appear to disclose the device as claimed, including a holder, where the mounting tube has a fixing structure for fixing the mounting tube onto the holder.

Referring to claims 20-23, the prior art does not disclose all the limitations of the claimed invention. The prior art does not disclose an electro-optical module for transmitting and/or receiving light of a plurality of optical data channels as claimed, including a TO-can holding the optical component.

Referring to claims 25 and 33, the prior art does not disclose all the limitations of the claimed invention. The prior art does not disclose the device as claimed, including the first optical waveguide core being larger than the core of the second optical waveguide.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent No. 5,499,309 to Kozuka et al.

U.S. Patent No. 4,165,496 to Ki Domenico, Jr. et al.

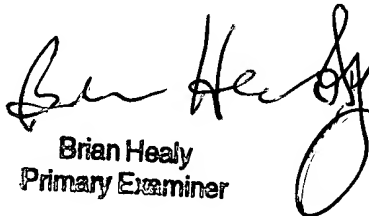
Each of these references discloses a device that is similar to that of the claimed invention.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin S Wood whose telephone number is (703) 605-5296. The examiner can normally be reached on Monday-Thursday (7am - 5:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney B Bovernick can be reached on (703) 308-4819. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 307-0956.

KSW
May 22, 2003


Brian Healy
Primary Examiner